VIRGINIA DROUGHT MONITORING TASK FORCE

Drought Status Report

June 7, 2011

Statewide precipitation for the current water year, October 1, 2010 to May 31, 2011 is within the normal range (88% of normal). However, the Chowan, Northern Coastal Plain, York-James, Southeast Virginia and Eastern Shore drought evaluation regions are all reporting below normal precipitation. Normal precipitation is defined as the mean precipitation for a thirty year period of record. Precipitation greater than 85% and less than 115% of normal is considered to be in the normal range. Statewide precipitation is in the normal range (93%) for the calendar year. Appendix A contains precipitation tables for periods dating from March 1, 2010 through May 31, 2011 provided by the Climatology Office of the University of Virginia.

As of June 15, 2011 the National Weather Service Climate Prediction Center 6-10 day climatologic outlooks call for above normal precipitation in southwest Virginia and the Shenandoah Valley and above normal temperatures for the entire Commonwealth. The 8-14 day outlooks call for equal chances of below normal, normal and above normal precipitation statewide, and above normal temperatures for the entire Commonwealth. The one month outlook calls for equal chances of below normal, normal and above normal precipitation statewide and above normal temperature for the entire Commonwealth. The three month outlook calls for equal chances of below normal, normal and above normal precipitation and temperatures statewide and below normal temperatures in the southwest portion of the state.

The June 7, 2011 NOAA U.S. Drought Monitor indicates “severe drought” conditions are present in 0.09 % of the state, specifically, in the south east corner of Virginia Beach. The Drought Monitor indicates “moderate drought” conditions exist in approximately 15% of the state, comprised of the central and south eastern portion of the Commonwealth and the Eastern Shore. “Abnormally dry” conditions exist in approximately 11% of the Commonwealth comprised of the south central region. The remainder of Virginia is reported as having no drought conditions (Appendix B). The Seasonal Drought Outlook for the United States from now through April 2011 forecasts “improvement” for the central and south eastern portion of the Commonwealth and the Eastern Shore and “no drought posted or predicted” for the remainder of the state. (Appendix D).

The Virginia Department of Health (VDH) reports that 2 systems are under voluntary water conservation requirements and 2 systems are under mandatory water conservation requirements. Of the 35 systems listed in the VDH report, 2 are rated as having a “Better” overall water supply situation and all other systems are rated as being in a “Stable” situation (Appendix F).

Reports from the Climatology Office of the University of Virginia, the NOAA’s National Weather Service, the United States Geological Survey, The Virginia Department of Agriculture and Consumer Services, and the Virginia Department of Environmental Quality follow.

Report of the Climatology Office of the University of Virginia

June 7, 2011

Widespread thunderstorm activity during the month of May brought significant rainfall to most of the Commonwealth west of the Fall Line; but with the exception of small isolated locations, below normal rainfall to the Tidewater. This geographic distribution of precipitation has been generally consistent throughout the Spring (March – May) and has resulted in a marked disparity in moisture accumulation during that period between eastern and western Virginia.

Over the course of Spring, the Piedmont and Mountain/Valley regions picked up about 120% to 170% of normal precipitation, while regions in the Tidewater accrued only about 50% to 75% of normal. This leaves the latter with significant deficits (two-thirds of normal or less) stretching back to the end of last year's growing season.

The atmospheric circulation regime that gave rise to widespread precipitation opportunities throughout the spring has transitioned to a more typical summertime pattern, in which highly variable thunderstorm activity will likely be the primary source of rainfall. In addition, the seasonal rise in temperatures, in concert with plant uptake, will increase moisture losses from the soil and decrease the likelihood that existing moisture deficits can be made up.

Hurricane season has begun and these decaying tropical systems can quickly provide large moisture inputs. Although forecasts for this season foresee higher than normal activity in the Atlantic, this does not translate directly into expectations of increased rainfall in Virginia.

Report of NOAA's National Weather Service

With the exception of the southeast quarter of Virginia, May brought average to above average precipitation. And, for much of the month, temperatures were close to normal. The last 10 days of May saw a significant increase in temperatures, with very limited precipitation.

Showers and thunderstorms Saturday night/Sunday morning (June 4/5) affected a large part of the southeast third of Virginia. However, it was insufficient to temper the excessive dryness in the southeast quarter of the Commonwealth.

Overall, the next 2 weeks will continue warmer than average across Virginia. However, there will be several opportunities for showers and thunderstorms starting as early as Thursday June 9th. Since the anticipated rainfall will be showers and thunderstorms, it is nearly impossible to estimate amounts. Overall, though, precipitation is expected to be average to above average across Virginia.

United States Geological Survey
Streamflow and Ground Water Levels

June 2, 2011

Statewide precipitation over the past several weeks has continued to maintain higher surface-water flows except for southeast Virginia (Appendix G) where precipitation has been minimal.

Groundwater levels (Appendix H) have remained steady or improved across the State, except for those in the southeast and the eastern shore which continue to decline. Precipitation events appear to have transitioned to summer type events. Summer precipitation in Virginia is characterized by scattered thunderstorms that may produce heavy precipitation locally, but large areas will have little or no precipitation. Below normal drought conditions persist in southeast Virginia and on the Eastern Shore of Virginia as evidenced by 1-day average streamflow statistics (Appendix I) and groundwater levels (Appendix H). Expect the area of below normal conditions to expand further across central and southern Virginia.

Virginia Department of Agriculture and Consumer Services
Status of Agricultural Drought

June 2011

According to the USDA Crop Weather Report released on June 5, 2011, only 53% of topsoil moisture ranged from adequate to surplus. Weather has varied widely across the state with some areas reporting excessive moisture in the fields, while others are experiencing very dry conditions. As temperatures continue to rise throughout the month of June, the dry conditions are likely to present a problem for producers in those areas already suffering. To date, the Governor has not received any requests for assistance in obtaining disaster designation due to drought. Pittsylvania and Washington counties, which experienced significant crop loss during storms in April, have requested the Governor's assistance in obtaining federal disaster designation due to damages caused by the recent severe storms. The Governor has submitted the official requests to the U.S. Secretary of Agriculture on behalf of Pittsylvania County. The official loss assessment report for Washington County is still pending.

As June temperatures begin to rise, producers are taking a "wait and see" approach. If the high temperatures are accompanied by sufficient rainfall, this could be an excellent crop year for many areas of the state. If there is little rainfall, certain areas of the state may experience below normal yields.

Northern Virginia and the Shenandoah Valley areas report wet conditions preventing work in the fields and in some cases delaying planting. However, producers are reporting that thus far it has been a good crop year with above average yields expected even if planting is delayed.

Southwest and Central Virginia areas report they are having a good year with above average moisture and wet field conditions. Although wet field conditions are delaying corn planting, making hay, and harvesting small grains in some areas, it is expected to be a good year for crops in these regions. There is concern that the rising temperatures could negatively affect crop growth. With no significant rainfall forecasted throughout the month of June, topsoil and subsoil moisture in Central region could become problematic.

The Southeastern region was reporting very dry conditions. Scattered rain fell over the region on June 5, 2011 providing much needed relief. Rainfall has been "hit or miss" and there is concern that unless additional rainfall is received soon, crop yields will be well below projections.

The lower part of the Eastern Shore is reporting extremely dry conditions. Producers in the region have begun irrigating extensively and spring-fed ponds are now at low levels. It will take significant rainfall to recharge the ponds. Snap bean growers have had to irrigate their land before they could plant their crop and stay on schedule. Other farmers have had to irrigate soybeans just to get them out of the ground. Corn that has been irrigated is about three inches tall and is in need of rainfall soon. Accomack County, which is on the upper end of the Eastern Shore, appears to have had adequate rainfall this season.

Virginia Department of Environmental Quality
Conditions of Major Reservoirs

Levels of large reservoirs statewide are at or above normal levels. Four large multi-purpose reservoirs are identified as drought indicators in the *Virginia Drought Assessment and Response Plan* (Plan); Smith Mountain Lake, Lake Moomaw, Lake Anna and Kerr Reservoir. All four of these reservoirs are currently at levels above their Drought Watch stages. Below is a summary of large reservoir conditions:

- On June 1, Lake Moomaw on the Jackson River was at 1582.41 feet, and was dropping at a rate of approximately 0.47 ft per day. Approximately 102% of conservation storage remains. Lake Moomaw is 17.41 ft above its Drought Watch level (1565 feet MSL).
- On June 1, Kerr Reservoir was approximately 0.59 ft above the Guide Curve and was anticipated to drop 1.09 ft by June 8, 2011. Drought Watch status is reached at greater than 3 ft below the Guide Curve.
- On June 1, Smith Mountain Lake was at elevation 793.60 ft. The Drought Watch stage for Smith Mountain Lake is elevation 793 feet and below.
- On June 1, Lake Anna was at elevation 250 ft (2 ft above drought watch). The Drought Watch stage for Lake Anna Lake is elevation 248 feet and below.

APPENDIX A
Precipitation Departures by Drought Evaluation Region

PRELIMINARY PRECIPITATION SUMMARY

Prepared: 6/5/11

	DROUGHT REGION	OBSERVED	May 1, 2011 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	5.34	4.82	0.52	111%
2	New River	5.84	4.21	1.63	139%
3	Roanoke	4.69	4.33	0.36	108%
4	Upper James	5.08	4.28	0.80	119%
5	Middle James	4.43	4.24	0.19	104%
6	Shenandoah	5.43	3.84	1.59	141%
7	Northern Virginia	4.00	4.34	-0.34	92%
8	Northern Piedmont	5.08	4.22	0.86	120%
9	Chowan	2.73	4.09	-1.36	67%
10	Northern Coastal Plain	2.40	4.16	-1.77	58%
11	York-James	1.90	4.27	-2.38	44%
12	Southeast Virginia	2.44	3.86	-1.42	63%
13	Eastern Shore	1.10	3.52	-2.42	31%
	Statewide	4.37	4.26	0.11	103%

	DROUGHT REGION	OBSERVED	Apr 1, 2011 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	11.37	8.58	2.79	133%
2	New River	11.53	7.76	3.77	149%
3	Roanoke	9.19	8.13	1.06	113%
4	Upper James	12.51	7.68	4.83	163%
5	Middle James	8.42	7.58	0.84	111%
6	Shenandoah	12.69	6.76	5.93	188%
7	Northern Virginia	8.85	7.64	1.21	116%
8	Northern Piedmont	10.59	7.51	3.08	141%
9	Chowan	4.67	7.52	-2.85	62%
10	Northern Coastal Plain	5.02	7.25	-2.23	69%
11	York-James	3.14	7.57	-4.43	41%
12	Southeast Virginia	4.08	7.11	-3.03	57%
13	Eastern Shore	2.62	6.44	-3.82	41%
	Statewide	9.02	7.68	1.34	117%

	DROUGHT REGION	OBSERVED	Mar 1, 2011 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	18.04	12.83	5.21	141%
2	New River	17.95	11.43	6.52	157%
3	Roanoke	14.51	12.40	2.11	117%
4	Upper James	18.23	11.47	6.76	159%
5	Middle James	13.82	11.64	2.18	119%
6	Shenandoah	17.02	9.96	7.06	171%

7	Northern Virginia	13.73	11.30	2.43	122%
8	Northern Piedmont	16.10	11.32	4.78	142%
9	Chowan	8.79	11.89	-3.10	74%
10	Northern Coastal Plain	9.02	11.53	-2.51	78%
11	York-James	6.14	12.26	-6.12	50%
12	Southeast Virginia	7.47	11.31	-3.84	66%
13	Eastern Shore	5.86	10.75	-4.89	55%
	Statewide	14.17	11.72	2.45	121%

	DROUGHT REGION	OBSERVED	Feb 1, 2011 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	20.34	16.41	3.93	124%
2	New River	19.75	14.36	5.39	138%
3	Roanoke	15.97	15.71	0.26	102%
4	Upper James	19.72	14.32	5.40	138%
5	Middle James	15.21	14.76	0.45	103%
6	Shenandoah	18.67	12.37	6.30	151%
7	Northern Virginia	15.62	13.97	1.65	112%
8	Northern Piedmont	17.42	14.29	3.13	122%
9	Chowan	9.97	15.06	-5.09	66%
10	Northern Coastal Plain	10.18	14.67	-4.49	69%
11	York-James	7.41	15.79	-8.38	47%
12	Southeast Virginia	9.09	14.81	-5.72	61%
13	Eastern Shore	7.31	13.94	-6.63	52%
	Statewide	15.72	14.85	0.87	106%

	DROUGHT REGION	OBSERVED	Jan 1, 2011 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	22.12	20.14	1.98	110%
2	New River	20.67	17.57	3.10	118%
3	Roanoke	17.14	19.63	-2.49	87%
4	Upper James	20.62	17.60	3.02	117%
5	Middle James	16.75	18.42	-1.67	91%
6	Shenandoah	19.69	15.22	4.47	129%
7	Northern Virginia	17.39	17.25	0.14	101%
8	Northern Piedmont	18.90	17.81	1.09	106%
9	Chowan	11.57	19.17	-7.60	60%
10	Northern Coastal Plain	11.74	18.42	-6.68	64%
11	York-James	9.87	19.93	-10.06	50%
12	Southeast Virginia	12.17	18.97	-6.80	64%
13	Eastern Shore	10.18	17.50	-7.32	58%
	Statewide	17.20	18.49	-1.29	93%

	DROUGHT REGION	OBSERVED	Dec 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	26.68	23.78	2.90	112%
2	New River	24.44	20.28	4.16	120%
3	Roanoke	20.33	22.88	-2.55	89%
4	Upper James	23.58	20.55	3.03	115%
5	Middle James	19.45	21.59	-2.14	90%
6	Shenandoah	22.17	17.81	4.36	125%

7	Northern Virginia	19.18	20.35	-1.17	94%
8	Northern Piedmont	21.43	21.09	0.34	102%
9	Chowan	14.82	22.19	-7.37	67%
10	Northern Coastal Plain	13.46	21.70	-8.24	62%
11	York-James	11.86	23.32	-11.46	51%
12	Southeast Virginia	15.01	22.15	-7.14	68%
13	Eastern Shore	13.31	20.74	-7.43	64%
	Statewide	20.17	21.61	-1.44	93%

	DROUGHT REGION	OBSERVED	Nov 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	30.01	27.06	2.95	111%
2	New River	27.49	23.31	4.18	118%
3	Roanoke	22.68	26.24	-3.56	86%
4	Upper James	26.09	23.91	2.18	109%
5	Middle James	21.78	25.10	-3.32	87%
6	Shenandoah	24.20	20.86	3.34	116%
7	Northern Virginia	20.89	23.76	-2.87	88%
8	Northern Piedmont	23.71	24.89	-1.18	95%
9	Chowan	16.67	25.30	-8.63	66%
10	Northern Coastal Plain	15.48	24.84	-9.36	62%
11	York-James	13.43	26.69	-13.26	50%
12	Southeast Virginia	16.73	25.22	-8.49	66%
13	Eastern Shore	14.51	23.68	-9.17	61%
	Statewide	22.50	24.84	-2.34	91%

	DROUGHT REGION	OBSERVED	Oct 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	32.42	29.94	2.48	108%
2	New River	29.41	26.48	2.93	111%
3	Roanoke	25.50	29.95	-4.45	85%
4	Upper James	28.31	27.16	1.15	104%
5	Middle James	24.52	28.94	-4.42	85%
6	Shenandoah	25.45	24.05	1.40	106%
7	Northern Virginia	23.53	27.24	-3.71	86%
8	Northern Piedmont	26.00	28.88	-2.88	90%
9	Chowan	19.22	28.88	-9.66	67%
10	Northern Coastal Plain	18.18	28.35	-10.17	64%
11	York-James	16.98	30.22	-13.24	56%
12	Southeast Virginia	19.78	28.88	-9.10	68%
13	Eastern Shore	17.16	26.89	-9.73	64%
	Statewide	24.95	28.34	-3.39	88%

	DROUGHT REGION	OBSERVED	Sep 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	34.74	33.40	1.34	104%
2	New River	33.36	29.89	3.47	112%
3	Roanoke	31.76	34.18	-2.42	93%
4	Upper James	33.83	30.66	3.17	110%
5	Middle James	30.62	33.07	-2.45	93%
6	Shenandoah	30.44	27.72	2.72	110%

7	Northern Virginia	29.95	31.31	-1.36	96%
8	Northern Piedmont	32.29	33.16	-0.87	97%
9	Chowan	27.52	33.31	-5.79	83%
10	Northern Coastal Plain	25.86	32.44	-6.58	80%
11	York-James	26.25	35.12	-8.87	75%
12	Southeast Virginia	33.06	33.31	-0.25	99%
13	Eastern Shore	21.73	30.50	-8.78	71%
	Statewide	30.99	32.34	-1.35	96%

	DROUGHT REGION	OBSERVED	Aug 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	39.87	37.23	2.64	107%
2	New River	38.60	33.20	5.40	116%
3	Roanoke	38.19	37.90	0.29	101%
4	Upper James	36.80	33.99	2.81	108%
5	Middle James	34.81	36.89	-2.08	94%
6	Shenandoah	33.14	31.05	2.09	107%
7	Northern Virginia	34.21	35.16	-0.95	97%
8	Northern Piedmont	35.70	36.98	-1.28	97%
9	Chowan	31.79	37.62	-5.83	84%
10	Northern Coastal Plain	30.20	36.30	-6.10	83%
11	York-James	27.95	39.99	-12.04	70%
12	Southeast Virginia	36.25	38.43	-2.18	94%
13	Eastern Shore	26.50	34.37	-7.87	77%
	Statewide	35.35	36.17	-0.82	98%

	DROUGHT REGION	OBSERVED	Jul 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	43.60	41.71	1.89	105%
2	New River	41.45	36.99	4.46	112%
3	Roanoke	41.45	42.29	-0.84	98%
4	Upper James	40.46	38.03	2.43	106%
5	Middle James	36.67	41.30	-4.63	89%
6	Shenandoah	36.52	34.81	1.71	105%
7	Northern Virginia	37.68	38.93	-1.25	97%
8	Northern Piedmont	38.03	41.38	-3.35	92%
9	Chowan	33.47	42.13	-8.66	79%
10	Northern Coastal Plain	31.67	40.75	-9.08	78%
11	York-James	31.31	45.09	-13.78	69%
12	Southeast Virginia	39.98	43.50	-3.52	92%
13	Eastern Shore	28.59	38.37	-9.78	75%
	Statewide	38.13	40.51	-2.38	94%

	DROUGHT REGION	OBSERVED	Jun 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	48.38	45.85	2.53	106%
2	New River	44.01	40.84	3.17	108%
3	Roanoke	43.53	46.18	-2.65	94%
4	Upper James	42.31	41.74	0.57	101%
5	Middle James	38.54	44.81	-6.27	86%
6	Shenandoah	38.35	38.52	-0.17	100%

7	Northern Virginia	39.02	42.79	-3.77	91%
8	Northern Piedmont	40.43	45.39	-4.96	89%
9	Chowan	35.99	45.78	-9.79	79%
10	Northern Coastal Plain	33.68	44.31	-10.63	76%
11	York-James	32.24	48.50	-16.26	66%
12	Southeast Virginia	43.21	47.11	-3.90	92%
13	Eastern Shore	30.12	41.35	-11.24	73%
	Statewide	40.49	44.30	-3.81	91%

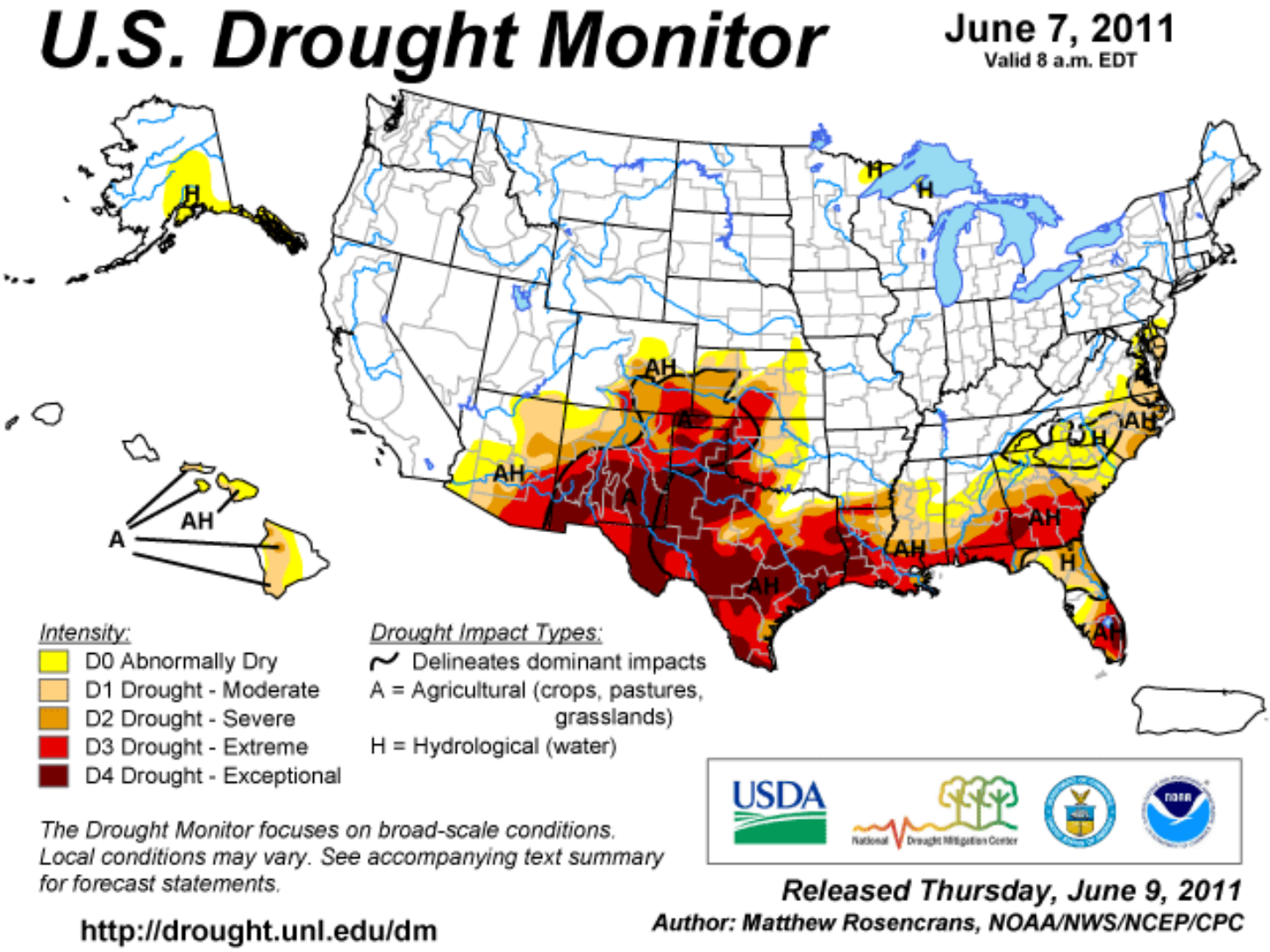
	DROUGHT REGION	OBSERVED	May 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	53.83	50.67	3.16	106%
2	New River	47.83	45.05	2.78	106%
3	Roanoke	48.18	50.51	-2.33	95%
4	Upper James	46.12	46.02	0.10	100%
5	Middle James	42.59	49.05	-6.46	87%
6	Shenandoah	41.41	42.36	-0.95	98%
7	Northern Virginia	43.66	47.13	-3.47	93%
8	Northern Piedmont	44.10	49.61	-5.51	89%
9	Chowan	41.41	49.87	-8.46	83%
10	Northern Coastal Plain	36.07	48.47	-12.40	74%
11	York-James	37.14	52.77	-15.63	70%
12	Southeast Virginia	47.42	50.97	-3.55	93%
13	Eastern Shore	32.23	44.87	-12.64	72%
	Statewide	44.66	48.56	-3.90	92%

	DROUGHT REGION	OBSERVED	Apr 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	56.51	54.43	2.08	104%
2	New River	49.67	48.60	1.07	102%
3	Roanoke	49.94	54.31	-4.37	92%
4	Upper James	47.82	49.42	-1.60	97%
5	Middle James	44.35	52.39	-8.04	85%
6	Shenandoah	42.76	45.28	-2.52	94%
7	Northern Virginia	45.25	50.43	-5.18	90%
8	Northern Piedmont	45.64	52.90	-7.26	86%
9	Chowan	42.85	53.30	-10.45	80%
10	Northern Coastal Plain	37.67	51.56	-13.89	73%
11	York-James	38.09	56.07	-17.98	68%
12	Southeast Virginia	48.61	54.22	-5.61	90%
13	Eastern Shore	33.41	47.79	-14.38	70%
	Statewide	46.37	51.98	-5.61	89%

	DROUGHT REGION	OBSERVED	Mar 1, 2010 NORMAL	- May 31, 2011 DEPARTURE	% OF NORM.
1	Big Sandy	59.39	58.68	0.71	101%
2	New River	53.74	52.27	1.47	103%
3	Roanoke	55.07	58.58	-3.51	94%
4	Upper James	51.92	53.21	-1.29	98%
5	Middle James	49.48	56.45	-6.97	88%

6	Shenandoah	47.48	48.48	-1.00	98%
7	Northern Virginia	49.00	54.09	-5.09	91%
8	Northern Piedmont	50.56	56.71	-6.15	89%
9	Chowan	47.44	57.67	-10.23	82%
10	Northern Coastal Plain	43.82	55.84	-12.03	78%
11	York-James	43.70	60.76	-17.06	72%
12	Southeast Virginia	54.91	58.42	-3.51	94%
13	Eastern Shore	39.64	52.10	-12.46	76%
	Statewide	51.07	56.02	-4.95	91%

APPENDIX B


U.S. Drought Monitor
June 7, 2011
Valid 8 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
http://drought.unl.edu/dm
Released Thursday, June 9, 2011
Author: Matthew Rosencrans, NOAA/NWS/NCEP/CPC

APPENDIX C

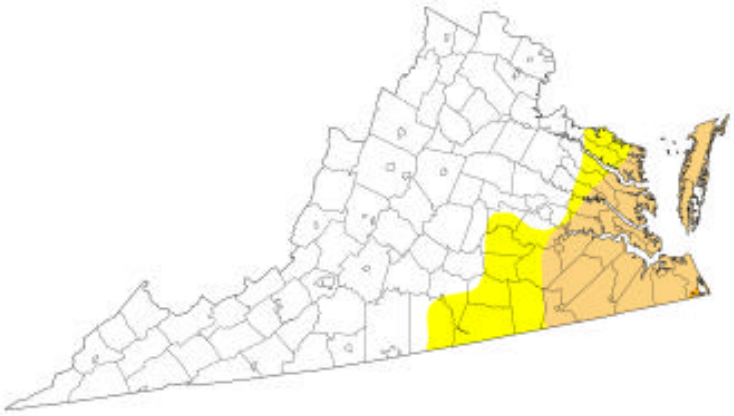
U.S. Drought Monitor

June 7, 2011
Valid 7 a.m. EST

Virginia

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	74.07	25.93	14.91	0.09	0.00	0.00
Last Week (05/31/2011 map)	74.30	25.70	12.88	0.09	0.00	0.00
3 Months Ago (03/08/2011 map)	11.45	88.55	53.12	0.00	0.00	0.00
Start of Calendar Year (12/28/2010 map)	81.67	18.33	0.00	0.00	0.00	0.00
Start of Water Year (09/28/2010 map)	13.71	86.29	49.67	28.15	0.79	0.00
One Year Ago (06/01/2010 map)	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

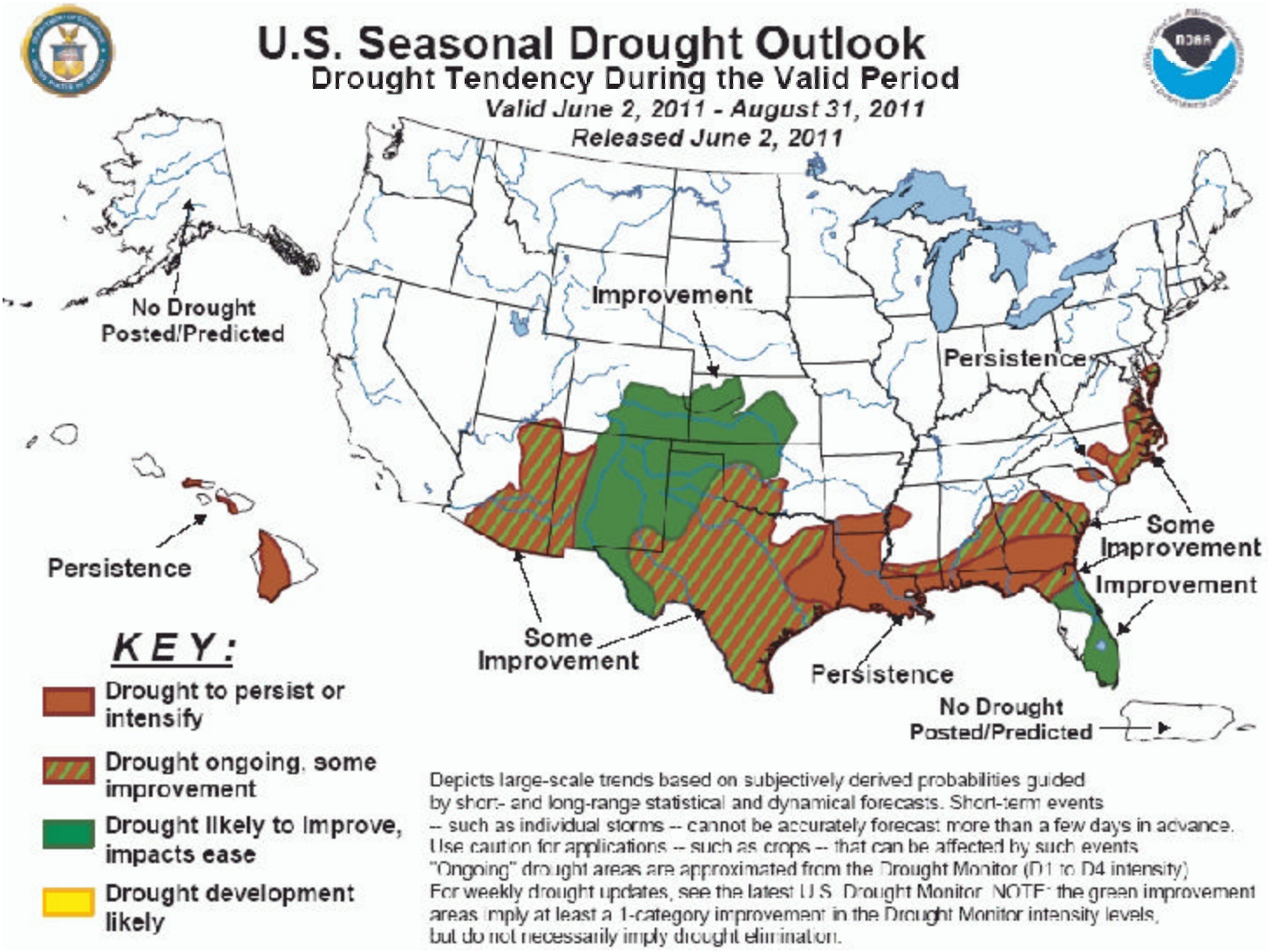
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

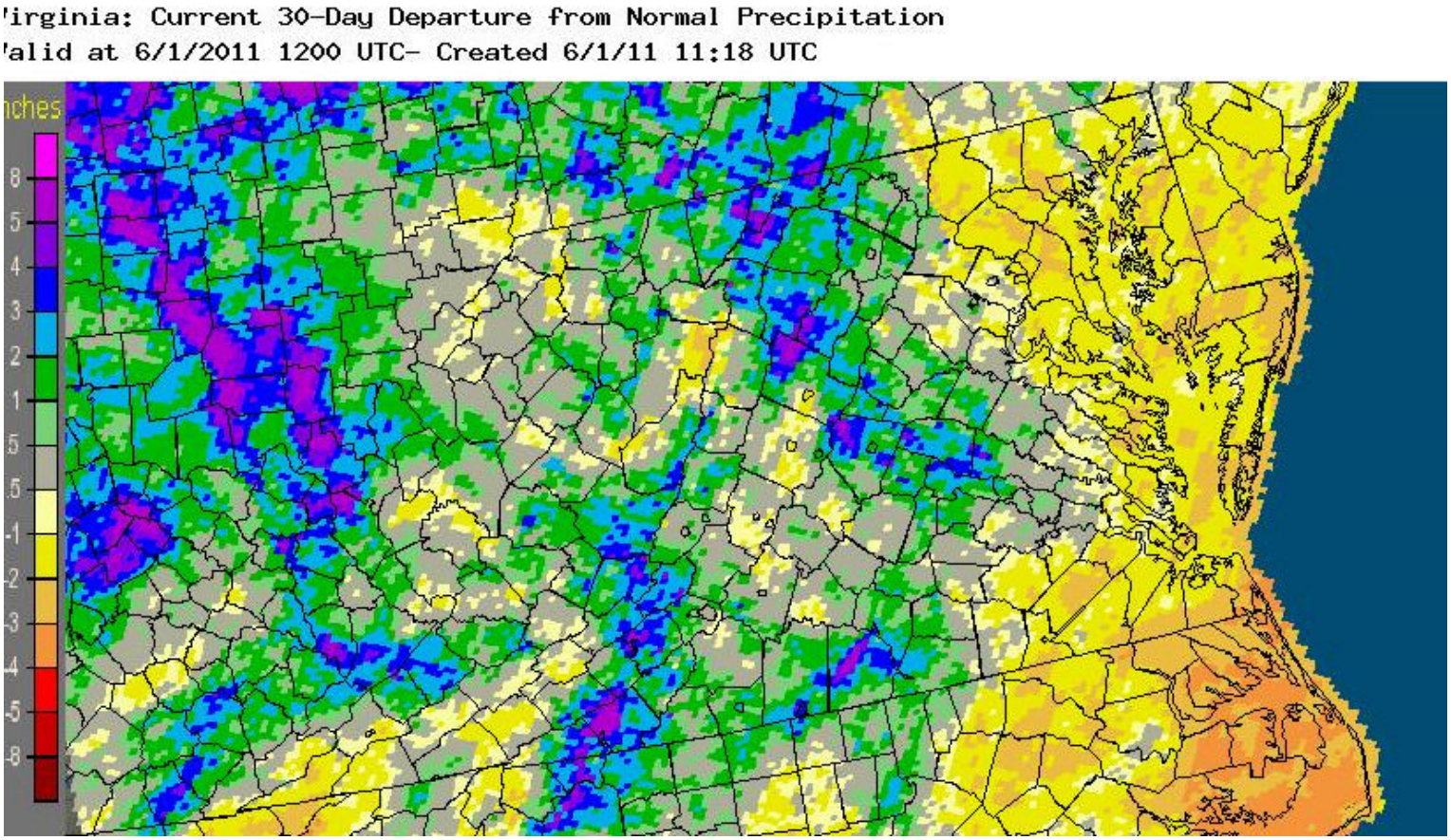
Released Thursday, June 9, 2011
Matthew Rosencrans, NOAA/NWS/NCEP/CPC

APPENDIX D


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid June 2, 2011 - August 31, 2011
Released June 2, 2011
No Drought
Posted/Predicted
Improvement
Persistence
Some
Improvement
Improvement
Persistence
Some
Improvement
Persistence
No Drought
Posted/Predicted
KEY:
Drought to persist or intensify
Drought ongoing, some improvement
Drought likely to improve, impacts ease
Drought development likely
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

APPENDIX E

30-Day Departure from Normal Precipitation
Valid June 1, 2011



APPENDIX F
Condition of Public Water Supplies
May 31, 2011

ODW Drought Situation Report

Date: **5/31/11**

	Restriction totals	Population Totals
Mandatory	2	2,134
Voluntary	2	9,456
Total	**4**	11,590

N-None
M-Mandatory
V-Voluntary

B-Better
S-Stable/Same
W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
3081550	GCWSA - Jarratt	Nottoway River	N	**S** - 05/31/2011 - River level sufficient to allow plant operation at 1.9 mgd. Gage at Stony Creek indicates 3.13 feet.	7,190
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water (Lake Gaston)	N	**S** -05/31/2011 Total rainfall for May 1.10 inches. There are no water restrictions in Chesapeake. Chlorides are used as an indicator of drought, the higher the levels the more concentrated the contaminant in a lesser amount of surface water. The average for the month was 139 mg/L. The river level is back to normal. Continuing to purchase raw water from Norfolk (7.0 MGD average).	109,411
3595250	Emporia	Meherrin River	N	**S** - 05/31/2011 - Reservoir level sufficient for	5,600

				normal operation.	
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	**S** - 05/31/2011 - Level at intakes sufficient to supply plant. MIB (taste & odor) detected in raw water and finished water.	28000 - Primary / 45463 Total including Consecutive System (Ft. Lee)
3700500	Newport News	Chickahomony River, Skiffs Creek, Diascand, Little Creek, Harwoods Mill, Lee Hall	N	**B -** 5/26/11 * Reservoir Status: 97 % Full (up 2.2**%**) * 42.3 Million Gallons Delivered	414,000
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	N	**S** - As of 05/31/11, reservoirs at 91.8% (from 94.1% on 05/02/11). Historic reservoir capacity is 92.7% at this time of year. Avg. pumping from Lake Gaston = 49.9 MGD (from 30.16 MGD). Total Reservoir Storage = 13,964 MG (from 14,317 MG).	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	N	**S** - As of 05/20/11, reservoirs at 98% (from 99% on 04/29/11). Median reservoir capacity is 100% for the month and historical average capacity is 98% (period of 1969-2010). The emergency wells are OFF. Rainfall recorded at Lake Kilby WTP gauge Suffolk, VA - Monthly total to date: 1.78 29 year May average rainfall: 3.96. Current year to date: 11.81 inches Median drought year average through May: 12.78	100,400 - Primary / 120,400 Total including consecutive systems (military bases)

				Year to date deficit against the 29 year average: -7.16. Estimated days of storage based on current pumpage and rainfall: 226 days	
3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	N	**B** -05/03/2011- Received 0.22 inches of rain from 04/27/2011 through 5/1/2011. Average reservoir levels : Southern Lakes at 82.5% capacity, for the Northern Lakes at 103.53% and Crumps Mill Pond at 95.24% . No conservation measures implemented at this time but will continue to monitor.	66,631
3830850	Williamsburg	Waller Mill Reservoir	N	**S -** 5/27/11: 3.5" above primary spillway (down about 3-inches from last report) - about 93% of usable capacity.	16,400
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	N	**S**- Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. All restrictions have been lifted. The reservoir is near full.	**200,000**
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	N	**S**- Purchases water from the City of Richmond and the Appomattox River Water Authority. All	286,000

				restrictions have been lifted. The reservoir is full.	
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	**S**	2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	**S-**Reservoir is full.	12,000
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	N	**S-**purchases water from Henrico County	2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	N	**S-** Conservation at all DOC facilities	9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	N	**S (see Richmond)**	71,000
4085770	SPRING MEADOWS-MEADOW GATE	Groundwater wells	N	**S**	2,300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	N	**S (see Richmond)**	289,000
4101900	WEST POINT, TOWN OF	Groundwater wells	N	**S**	3,000
4127110	DELMARVA PROPERTIES	Groundwater wells	N	**S-**New Kent Co. encourages conservation at all county owned waterworks.	7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N	**S**	2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N	**S**	3,300
4760100	RICHMOND, CITY OF	Surface water; James River	N	**S**- water levels do not affect intake; James River Regional Flow Management Plan set restrictions based on James River level for counties of Henrico, Chesterfield, Goochland, and Hanover counties, which purchase water from the City.	197,000

6033085	Caroline Utility System	Groundwater wells	**M**	**S** - Mandatory water use restriction of Emergency-Level 6 went into effect 5/30/2011 due to well pump failure and high water demand. (Updated 5/31/11)	3,600 Primary
6047500	Town of Culpeper	Surface water - Lake Pelham	N	S - Lake Pelham level was 5" above overflow invert on 5/26/11.	14,200
6059501	Fairfax Water	Surface Water - Potomac River and Occoquan Reservoir	N	S - 5/26/11 - Potomac River flow is satisfactory. Occoquan Reservoir is full.	823,216 primary 1.8MM total
6061200	Marshall	Groundwater	**M**	**S** - The WSA Alert Messaging Service maintains the Water Use Restriction Notice as of 5/27/2011. The mandatory water use restriction is not directly drought related but depends on water source development.	2,134
6061600	Town of Warrenton	Surface (Cedar Run) and groundwater	N	S-On Friday, May27,Warrenton Reservoir surface was at 445.7 ft vs full level of 445.3 ft.	11,160
6107150	Town of Hamilton	Groundwater	N	**S** - 5/3/11 Voluntary water use restrictions lifted 5/9/11. No supply problems.	2,000
6107300	Town of Leesburg	Surface Water - Potomac River	N	S -5/26/11 - Potomac River flow is satisfactory.	46,300
6107600	Town of Purcellville	Surfce water/groundwater	V	S - 5/26/11 - Surface water reservoir is full and is overflowing. Voluntary water conservation initiated 7/2/10. No water supply problems.	6,300

6107650	Town of Round Hill	Groundwater	V	S - 5/26/11 - Voluntary water use restrictions replaced mandatory on 10/21/10. No problems.	3,156
6137500	Town of Orange	Surface: Rapidan River	N	S - 14-day average of Rapidan River flow was 1750 cfs on 5/27/11.	4,500
6137999	Wilderness	Surface - Rapidan River	N	S	11,331
6600100	City of Fairfax	Surface Water	N	S - 5/26/11 Goose Creek flow has been sufficient. Beaver Dam Reservoir is full.	24,000

APPENDIX G

USGS Streamflow Conditions for June 1, 2011

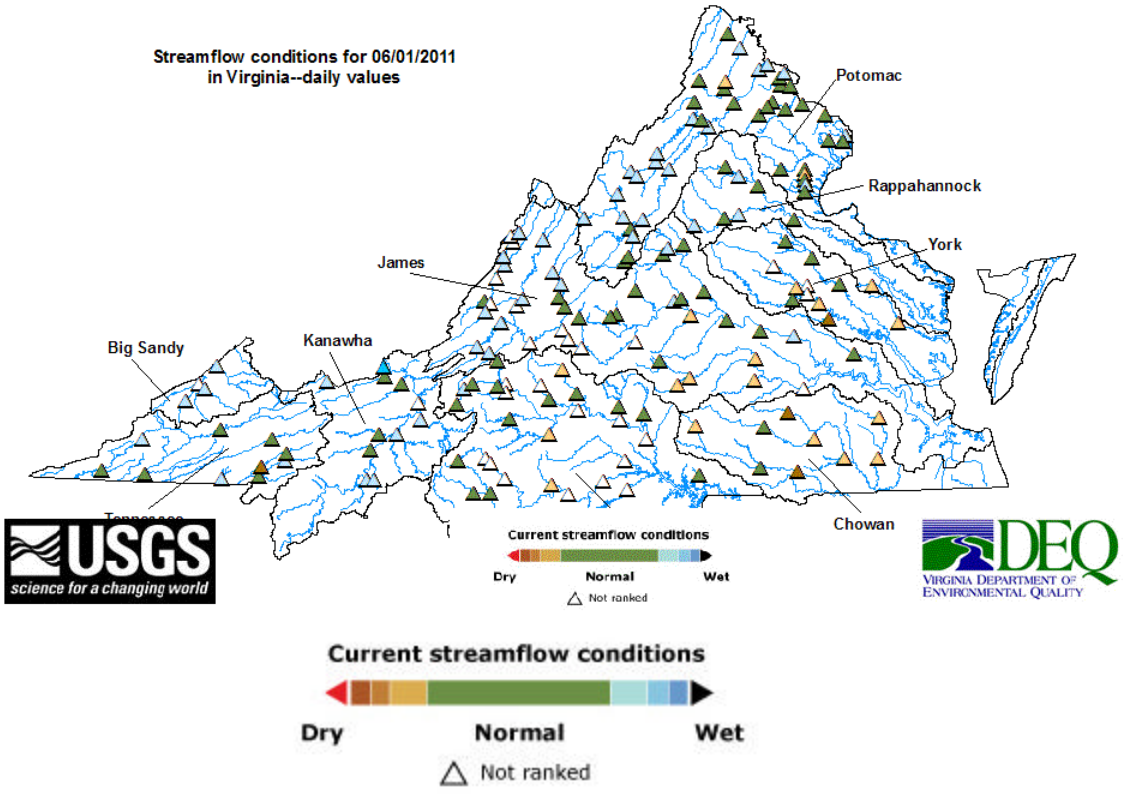


Figure 1. Streamflow conditions in Virginia for June 1, 2011

APPENDIX H

Groundwater level conditions for in Virginia
June 1, 2011

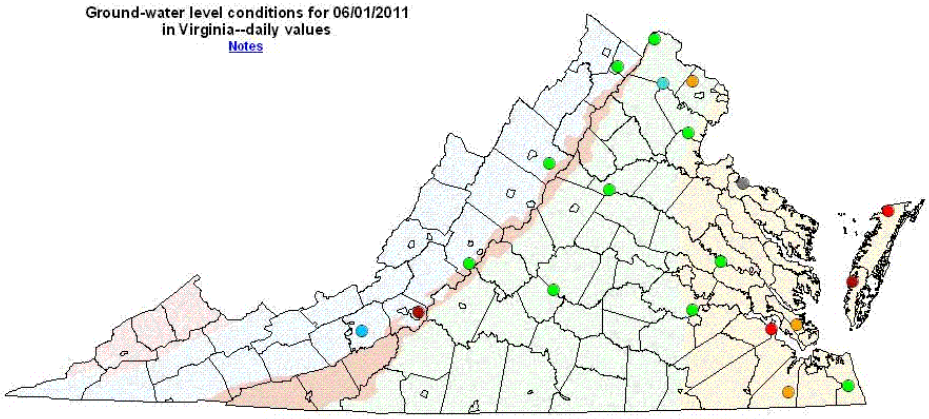


Figure 2. Groundwater-level conditions in Virginia for June 1, 2011

APPENDIX I

Drought Conditions Based on Daily Average Streamflow June 1, 2011

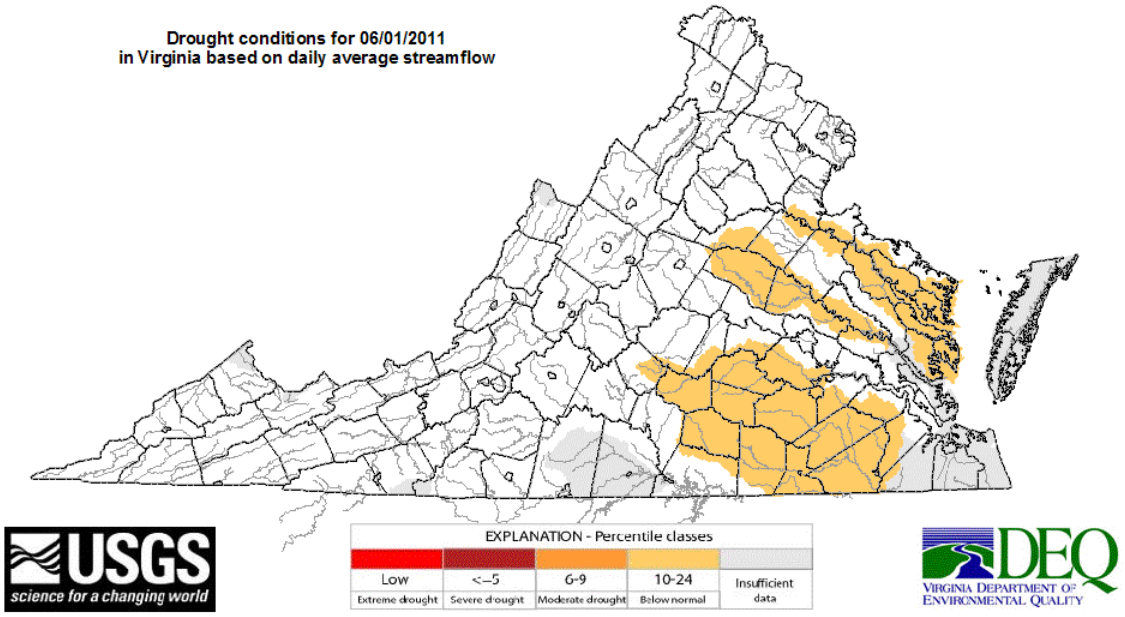


Figure 3. Drought conditions, based on average daily streamflow for June 1, 2011